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THE
MOTHER'S ORACLE,

FOR
THE HEALTH

AND
PROPER REARING OF INFANCY.

IN TWO PARTS.

PART 1.—The general Management of the Child from Birth to Puberty.
PART 2.—Observations on the particular Treatment of the Stomach and Bowels, the chief Seat of the Child's Disorders; intended for the Use of every Guardian of Childhood.

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THE MOTHER'S ORACLE.

I.—WASHING THE CHILD.

AFTER birth, the first occupation that calls for the attention of the nurse, is the impurity attached to the skin. This impurity is common to all animals; and the mother, in the brute creation, generally removes it by licking the skin of her offspring.

In man the skin is of more consequence, and requires a more careful removal of impurity than in other animals, in order to the free outlet of the perspiration. Its healthy state is at all times important to the welfare of the system; and at birth a more tenacious matter attaches to it than the impurity of other animals, something resembling a soft fat: this, if allowed to dry, produces both a disagreeable smell, and also, hardening, acts by mechanical irritation.

To remove this, then, is the first duty of the nurse; and in order to do it effectually, the skin of the child should be first smeared with lard, and then carefully washed off with fine soap and lukewarm water, by means of a piece of flannel or sponge, attending particularly, in this operation, to the joints and folds of the skin, where the impurities most adhere. The child should then be conducted to the fire side, exposing him as little as possible to cold.

II.—DRESSING THE CHILD.

The child, being thus cleaned, is next to be dressed; and the points here to be studied are to convey to it sufficient heat, and to avoid inconvenience and pressure. Previous to dressing, friction should be made with the warm hand of the nurse upon the belly of the infant for a minute or two, which gives parti-

cular pleasure to the feelings of the infant, and also promotes the healthy action of the bowels. In winter and cold weather, the under dress of the child, both shirt and petticoats, should be of the finest flannel, which should be often washed, from being soon soiled. This material is always preferable, as a non-conductor of heat from the child; not allowing its too rapid escape. The quantity must be regulated by the period of the season and the judgment of the mother and nurse.

The nicest point in the dressing of the child is the adjustment of the belly-band, which is meant to give a general support to the belly, and particularly to the navel. This is rendered necessary in any sudden exertions, as crying, coughing, sneezing, or straining. The band should be formed of elastic flannel, and never applied too tightly, as it is apt, by pressing too much on the belly in general, to occasion its contents to press down on the weak parts; the navel (or scrota) opening, and thus producing rupture or hernia.

The other parts of dress must be formed to answer the temperature of the climate and the seasons of the year. A moderate warmth is always to be attended to, and the feelings of the child studied on that head. As the child advances, and when it has reached the eighth or ninth month, an alteration should take place, in the length, if not also in the form of the dress. By its being made to leave the limbs and under parts free, these parts will the sooner come to acquire strength and firmness. The under parts of the dress being of flannel, as guardian of the health, the upper may be given up to fashion and the caprice of the parent. The first stockings and shoes should be of woollen; as they will dry up the moisture when wetted, and be easily removed in a few minutes, at any time.

The great point with children is to prevent the continued application of cold and moisture by wetted cloths: the cloths should, therefore, be removed as soon as they are found to be wet, and dry ones substituted, cleanly washed, and not dried

full of ordure and urinary salt. In adjusting the dress of infants, as few pins should be used as possible; tapes should be preferred, and pins confined to the upper garments.

III.—DRESS OF CHILDHOOD.

Such should be the dress of the child till after weaning; and from that period, caprice and fashion, on the part of the parents, are the only guides.

The great object of dress, as already stated, is to protect the body against the changes of the seasons; and in doing this all unnecessary restraint in the form of the garment should be avoided. The loose style of dress is preferable to any other, and no restriction should take place on the belly or the extremities; therefore stiff stays should never be put on the female, and suspenders should keep up the under part of the dress of a boy. This is the more necessary, from the exertions children make at this age, which are apt, where their motions are restrained by dress, to occasion rupture or hernia.

In the choice of dress, the extreme of too much of it is equally to be avoided as too little; and too much heat is as much to be guarded against as cold;—the period of the season should determine the proper regulation of dress.

In childhood a superfluous quantity of clothes is most to be deprecated; for, as at that period much exercise is taken, the child is liable to be overheated, and if the body becomes suddenly chilled, most serious consequences arise from it. Too much warmth of the neck and throat of boys is particularly injurious; for these parts becoming overheated sooner than any others, their additional clothing is removed, perspiration becomes checked, and disease follows.

In girls, these parts are too much exposed in the opposite extreme, which is often the cause of complaints of the chest. The head, covered with its own matting, the hair, is less liable

to be affected by the temperature than any other part, and should have no warm covering, excepting when abroad.

With regard to the legs and feet, in winter their coverings cannot be too warm, especially on the feet, though not so as to excite actual perspiration.

After the fifth year, children should be inured to changes of temperature, frequently, but not long continued at a time,—the effects of which can always be judged of by the feelings of the child and its appearance; and when he is removed out of the cold, he should not be carried suddenly into too warm an atmosphere. In the trial of these changes, the child should not be allowed to stand still, but made to take exercise, which will counteract the effects of cold, and keep up the circulation.

IV.—ATMOSPHERE OF THE CHILD.

1st.—Its Purity.

The purity of air is determined by its proportion of oxygen, or that principle which renders it respirable. Whatever lessens this, lessens its fitness for the preservation and healthiness of human life; and, as the air we exhale does this in a high degree, so every thing that favours the impure state of it ought to be avoided in the care of a child; which should never, therefore, be put under the bed-clothes, to accumulate its own vitiated atmosphere, or that of the mother or nurse. By doing so, every inspiration it takes lessens the quantity of oxygen it receives or draws in, and the place of it is supplied by an equal quantity of that noxious or irrespirable gas, its own creation, termed carbonic acid gas. If this, then, is long continued, the atmosphere of the child will be so completely destroyed in purity as to prove fatal to it. Besides this loss of purity, an additional argument may be used for prohibiting the practice of putting the child under the bed-clothes with the mother or nurse. There proceeds, it is well known, from every living

body, an insensible as well as a sensible perspiration, which no less taints the surrounding atmosphere of the child than that from the lungs, and with the same principle of impurity already stated. This additional cause renders the other still more powerful; and under their joint influence the infant too often perishes at the mother's bosom, while she conceives she is exercising her maternal duty with the most tender regard, in screening its little frame from cold. From this dangerous procedure, in Britain alone, there perished 40,000 children from 1686 to 1800; but, independent of the serious injury of the child sleeping with the mother or nurse, a similar though less extensive vitiation of the child's atmosphere will arise from various operations going on in the same apartment with it; particularly washing, ironing, and drying clothes, commonly performed in nurseries. Hanging up wet clothes and soiled articles,—wetting the floor too often, and burning of combustible matters. Indeed it would be proper that no soiled articles should be applied a second time till rewashed, and thus nothing it wears would continue for any period embued in its own discharges. This attention to the health of the child, begun from the first, must be continued; and though, in its progressive growth, it is more able to withstand the influence of such causes, still precautionary measures should never be omitted. Even a frequent ventilation of the nursery should take place, as an additional security for the pureness of its atmosphere; but, in doing so, care must be taken to avoid cold, or introducing too low a temperature, or exposing the child to a partial current of air.

2nd.—Its Temperature.

But, besides the purity of the air, its temperature is no less an object of consideration. Children should never be exposed to great changes, either of a high or low temperature; and accordingly, in a cold climate, they cannot be suddenly placed in

a great degree of cold without immediate risk; for, though we may guard by clothes the external parts, we cannot give the same security for its access to the lungs. But it is not so much the immediate effect of the present cold as the after effect of the reaction from a heated atmosphere: which, by rousing the system from its torpor, often goes the length of producing inflammation. Nothing, then, can be more preposterous, nothing more dangerous, than attempts to harden children by the sudden application of cold. The most fatal consequences have arisen from the practice of washing infants in cold water at an inclement period of the season; and clearly, while the principle of life hangs by such a feeble tie as in the constitution of early infancy, such a sudden change can never be made with impunity; on the contrary, it is the cause of much suffering, great increase of disease, and consequent mortality.

But, if sudden exposure to cold is so injurious, the opposite extreme of bringing up the infant too tenderly is equally to be avoided. Heat, beyond a certain degree, and too long continued in a lesser degree, operates as an active stimulus on the bodies of children, and urges them to precocious expansion, or too early developement, as is proved by the precocity of the inhabitants of warm climates.

Thus, in the rearing of children, extremes are ever to be avoided. Sudden application of cold produces violent reaction and inflammatory tendency, while heat and its continued application enervates the system, and converts what would have been by different treatment a sound and healthy constitution into a weakly one.

Nature, we may observe, has formed the inhabitants of all countries for their climate: thus, in the extreme cold of Greenland, the stature is curtailed or short, the body is enormously fat, and the desire is for the most stimulating food. By this short stature, the circulation is better kept up; for tall persons suffer most from cold. In the same manner the cor-

pulency of those in high latitudes counteracts the influence of heat, and their rapid digestion of stimulants carries off from their bodies the excess of caloric.

V.—FOOD OF THE CHILD.

Next to the situation in which the child is placed, its future nourishment or support becomes the important object; and this is conveyed to it either by the mother from her own body, making it still, as it was in the womb, part of herself, or it receives it independent of her supply. The first is suckling by the mother,—the second is termed bringing the child up by hand.

1st.—Suckling by the Mother.

The mother's milk is the natural food of the child. In every animal this supply is peculiarly adapted to the species for which it is intended; and the milk of the human subject possesses more of the saccharine principle than any other; pointing out the predominance of this quality as the grand source of its nourishment. Where the mother possesses a sufficient supply of milk, nothing extraneous should interfere with it,—the child should be applied to the breast as early as possible; for the demand for food commences after the first few hours of the child's existence.

Though the proper food of an infant, at all times, is the milk of its mother, yet, if, during the first month, this cannot be supplied in sufficient quantity, from circumstances connected with her situation, then a substitute for it may be made, in two-thirds of cows' milk, one-third of water, and a small proportion of loaf sugar. A portion of this mixture, occasionally, will supply a deficiency of the maternal streams. In making the mixture, the milk should be new from the cow, used as early as possible, and the water, which should be

warm, never added till the child is to be fed. All danger of acidity by keeping will thus be avoided.

In the use of all food for infants, little should be given at a time, but often repeated; and it should never be forced upon it beyond its inclination.

The first substitute for a mother's milk may, in the course of a certain period—about the fourth or fifth month,—give place to a change, and barley water, gum arabic water, rice water, or a little arrow-root may be given. It is best, however, not to give a variety, but to select and adhere to one article, which the stomach of the child will digest more readily than anything else, from being familiar with it.

The propriety of this is confirmed, when we reflect that Nature has prepared but one kind of food for this early period of life—and to follow the path of Nature is the most unerring rule.

Even the state in which the food is given is an important consideration, in order that no previous decomposition of it may have taken place before it enters the stomach. Indeed, the powers of digestion which the organ possesses should regulate the nature of the food, and nothing should be pressed upon the infant injurious to its feeble frame, or which does not readily admit assimilating when taken into the stomach.

It is by this organ the system, in general, is exclusively governed; and its powers are so arranged by Nature, that it best prepares that food which is best suited to the economy of the animal.

In all the most perfect animals, milk is the first food prepared for the young; and it is particularly so with man, whose immaturity lasts longer than that of any other animal. His infancy is marked by certain periods, at which his different powers are developed—this is displayed in the state of his mouth and the powers of his stomach. Before dentition, milk, or a fluid equally simple, is the only food he can digest.

On the appearance of teeth, the vegetable nourishment begins to be called for,—and not till the structure of his mouth is complete does animal food seem intended for his use.

From the time of dentition, then, vegetable food may be allowed, in addition to the milk, in the form of broths and tea. When dentition is advanced to the protrusion of the eye-teeth, animal food may be sparingly begun, once a day, in a solid form, and but little of it at a time; for the stomach will be still unable to manage too great a supply. When this extraneous food is given, it should be done so as that it may not interfere with the provender of the mother; and it should be received by the infant on an empty stomach, to insure the full powers of the organ in its digestion. On this introduction of a change of food, the mother should gradually lessen her supply, and confine it to certain stated periods of suckling. In this way, her store will accumulate, and she will be ready to satisfy any clamorous demands of the infant, especially at night, which should be her last operation on going to bed—but the child should never be allowed to sleep on the breast.

2nd.—Bringing up by Hand.

Such is the plan of conduct where the mother suckles the infant herself, and stands only in need of a little additional nourishment for the infant above her own supply; but, in an equal number of cases, the mother is either unable to suckle at all, or declines the office; and, disliking the substitute of a hired nurse in her place, she prefers bringing the infant up, according to common language, by hand. This is done either by the spoon or the bottle; and the latter is certainly the preferable mode of executing it; but, whichever of them is chosen, the effect is the same—for the supply and choice of the nourishment is also the same.

The preparation, before suggested, of a proportion of cow's

milk, and water and sugar, approaches nearest to the qualities of human milk, and being so, it is the best substitute for that of the mother.

In rearing by hand, it has always been considered necessary to commence an addition of diet sooner than when reared by suckling. In giving food, however, it should be done in small quantities at a time—never in greater than what the stomach may be supposed to assimilate at once; for it is better to leave off with the feeling of appetite than that it should be loaded by excess. The feeding should seldom be repeated oftener than every three hours,—this being the usual time required for digestion. The rule is more necessary, from the circumstance that regurgitation does not take place so readily when the infant is brought up by the hand as with the mother's milk; the latter possessing a power which provokes the action of the stomach, and thus removes the uneasiness of the infant, which other food has not the tendency to do; and, therefore, limiting the quantity to time, till habit has established what the infant can bear without repletion, is of great importance.

In whatever form milk is used, it should never be prepared by boiling,—for the boiling point brings it to form a pellicle, which deprives it of some of its most valuable parts.

In giving an infant food, it should be in a raised posture, which will prevent the danger of strangulation; and it should also be given slowly,—the child being allowed to rest some time after every meal, without being jolted about, or any motion which employed may disturb the stomach, or cause indigestion, and all the inconveniences which arise either from the derangement of it or the bowels. Hence, the exercise of a child should only take place after digestion has proceeded so far that the stomach cannot be annoyed by it. Accordingly, it may be laid down as a proper maxim, that repletion in feeding, and exercise immediately after, are equally to be avoided in an infant. The first occasioning the best part of

the food to pass into the bowels undigested, and the latter decomposing the nourishment in its preparation to chyle.

With respect to the drink of infants, plain water is the best beverage, and should never be changed for anything stronger during all the period of childhood.

3rd.—Weaning.

When the child is suckled by the mother, there is a period when it must end—and this is the time of weaning.

Weaning should never take place till some teeth are protruded, as demonstrating the powers of the stomach fit for other nourishment. Neither should it take place if the child is in bad health, or at an inclement season of the year. Previous to this separation, the child should be accustomed, for some time, to other food, and the breast withdrawn from it, by lengthening the intervals of sucking. An aversion should then be inspired in the infant to the breast, by smearing the nipple with some nauseous substance.

After weaning, the diet of the child is a point of important attention. Milk is still the best food, combined with some of the farinaceous grains, as wheat, rice, arrow-root, &c.; and whichever of these seems to agree best should be continued, and not changed.

Whatever the period of weaning may be, it should never take place till there is evidence that the child can depend upon its own powers for support; this can only be demonstrated by the appearance of teeth,—a proof that it is fit for food additional to that of the mother's milk; and, if left to choice in the time of weaning, the proper period is when the child has cut three or four teeth. Previous to weaning, for some time one great point should be to teach the infant to drink out of a cup or other vessel. Much depends, after weaning, in the choice and quantity of food given to the child. The same

preference of milk, with some of the farinaceous grains, should be steadily continued, and no gross or too solid substance administered: neither, at any time, should such a portion of the usual food be given as to oppress the stomach, or which the child cannot digest. Should, however, the vegetable food disagree, a little animal juice may be usefully interposed, or the gum-arabic solution sweetened with sugar and milk, or rennet whey sweetened and disguised.

4th.—*Teething.*

After considering the important subject of suckling a child, and of weaning it, the progress of teething, as the most critical period of life, claims particular notice.

The teeth, in their usual progress, are thus unfolded: they are originally formed in the foetal state, or before birth, and confined in distinct compartments or sockets. The deciduous are first set above the second or permanent set. The first set consists of four incisors or cutting teeth in each jaw, two canine or dog's teeth, and four molares or grinders; making, in all, twenty.

The pain of teething, and its influence on the system, producing various sympathetic affections, arise from the continued stretching of their investing membranes. The process of cutting commences about the sixth or seventh month, and ends about the second month. This first set is always smaller than the second or permanent ones, with the exception of the small grinders; and nature has appointed this lesser size, as the jaw afterwards enlarges for the permanent set.

In cutting the teeth, the process takes place in the following order:—

1st. The two middle incisors of the lower jaw appear, followed in ten days or a fortnight by the corresponding ones of the upper jaw: sometimes they appear all at once in the upper

jaw, before the under. The two *canini* of the under jaw are next denuded, followed by their fellows in the upper; then succeed the two molares on each side below, which are soon after followed by those above.

When four or six years have elapsed, additional grinders are added to these, which form permanent ones; and at twenty-one the four late teeth, termed wisdom teeth, are added to the set.

Though this is the usual progress of protrusion, yet many deviations occur.

At first each tooth consists of a pulpy substance, and gradually acquires hardness in proportion to the growth of the teeth. The first ossification takes place in the crown, and proceeds to the root, which is hollow, for the transmission of its vessels and nerves.

This instrument of mastication is further surrounded by a delicate and highly sensitive membrane; the stretching of which, as the tooth advances in growth, occasions the acute pain and inflammation, only to be relieved by cutting or dividing the gum. The attendant symptoms that mark the advance of teething are all of an inflammatory nature, and show, more or less, irritation on the surrounding parts; increased heat takes place in the mouth of the child, followed by thirst and itching of the gums, which causes the child to press on every hard substance within its reach, and the more so as it grows older.

The irritation of the gums and surrounding parts next produces salivation or slabbering, as an effort of Nature to lessen inflammation, to take off fever and its attendant symptom, thirst; and also to increase the power of the stomach for digestion, lessened by the presence of fever, as well as diminishing the general fullness of the system. In the progress of this state, the gum becomes redder, swelled, and, over the seat of the tooth, semi-transparent, particularly over the lower jaw.

These symptoms, in the part thus described, produce various sympathetic affections: first, in the membrane of the nose, which becomes red and itching, occasioning sneezing, &c. Second, fever is felt to extend through the system, and is marked by the heat of the palms, the high-coloured urine, flushed cheeks, (particularly one of them), dryness of the lips, and heavy, languid eyes. In many cases the fever takes a very aggravated form; and high inflammation attacks the parts affected, and also pervades the general system,—displayed by startings in the sleep, delirium, affections of the bowels, &c.

5th.—Process of Cutting Teeth.

The protrusion of the teeth forms a peculiar process in the manner of its taking place. The tooth, as it enlarges, presses in different directions. In pressing downwards it is bounded by the root; but upwards it is only by the gums and investing membrane, which become absorbed in consequence of the mechanical powers of the teeth, occasioning increased action of the absorbent vessels—a chief function of the animal economy.

It is during the progress of this operation of Nature that the child feels particular gratification in the pressure of hard substances against the gum, in which it should be indulged, as lessening pain, promoting absorption, and increasing the secretion of saliva. The best substance for this purpose is a flat ivory ring, or glass,—both presenting to the gum a broad flat surface. If the symptoms are very severe, incision of the gum affords the best relief.

6th.—Second Dentition.

Such is the history of the first dentition, which is not terminated before the seventh year of the child's age; when Nature supplies him with a second and more permanent set. In order to this, the first or insidious set gradually decay; and it

it is at this time, when the second set are to make their appearance, that particular attention should be paid to the mouth of the child. This is essentially necessary with the front teeth; and the remains or decayed stumps of the first set should be carefully removed, to prevent inflammation, gum boils, and all those inconveniences which may hinder the proper entrance of the second, or permanent set, into their places, and thus render the mouth disfigured. The reason for the second set of teeth is obvious, from the great change in the size of the jaw, in consequence of its spreading in growth, and the difference of the food required for mastication. Previous to the second set appearing, the child undergoes considerable changes in growth. The chin becomes rounder, the features are more expressive, the nose assumes its permanent form, and the general structure becomes more fully arranged and developed, shewing a picture of what the man will afterwards be.

The second set observe nearly the same progress in shedding as the first. The incisors first protrude the first molares at twelve years of age; the second molares at the eighteenth year; and the wisdom teeth from the twenty-first to the thirtieth year,—sometimes later.

VI.—FOOD OF ADVANCED CHILDHOOD.

Till after puberty, animal food should never be made a principal part of the diet of children; a proper selection, however, of vegetable matter should be made; and that of the farinaceous kind is best adapted for them. Too much animal food renders a child dull and heavy, and incapacitates him from pursuing his education;—a mild, nutritious diet, where milk forms a large proportion, is of equal advantage to him, both as to health and spirits. No food should, at any period, be forced upon a child which is found, on trial, to disagree with him;

and the mere dislike of it should never be persevered in so as to induce a permanent disgust. Real aversion arises from a particular feeling of the stomach, which is not to be overcome; but it will be best attempted by placing the offensive article often in a child's view, and accustoming him to the sight and smell of it, which may perhaps, in time, get the better of his reluctance.

In the choice of articles of diet, whatever agrees with the stomach will be found generally most wholesome.

Conclusion on Diet.

Thus we may conclude that the food, before dentition, requires to be different and simpler than that after this period.

2nd.—That, from dentition to puberty, a gradual increase only of stimulant diet should take place,—and,

3rd.—That the food for adult age should never be allowed before puberty. In addition to which, it may be observed that all food can only be considered to have a wholesome tendency when taken in proper quantities, at fit periods, and under proper circumstances.

To children, one of the most exceptionable articles of diet is an indulgence in fruit. Most fruits are of more difficult digestion than other food; they are apt also to derange the stomach and bowels: and hence, at any period of childhood, they should be sparingly given; for, as a further proof of their insolubility, they often pass through the body unchanged.

VII.—SLEEP OF THE CHILD.

Compared with after-life, infants, at birth, may be considered as enjoying only a half existence. An infant is constantly in a dormant or passive state, except when roused by the calls for food. This seems absolutely essential, in order that life may not be expended, where so much is required for the purposes

of digestion, of nourishment, of secretion, and of growth. This disposition of its system invariably takes place, except when interrupted by some derangement of its nerves, which is manifested by watchfulness and crying.

At birth, also, some of the senses appear imperfect; particularly the sense of hearing, which is a provision favourable to the passive state requisite at this period, and in order that its sleep may suffer no interruption by the acuteness of this sense.

But this obtuseness of hearing is, in a short period, counteracted by its acuteness; for it now requires its powers, by familiarity and habit, to be so far checked as to bear a moderate degree of noise and sound. This is a highly prudent measure to be pursued with every infant; for if a child will only sleep under the influence of stillness and quiet, his rest will be liable to be broken at all times on the least stir, and his attendants kept on the watch for his convenience and humour. The infant, therefore, should be obliged to fall asleep without any provision for stillness, but the usual state of the place observed with regard to moderate noise and stir of those about him. By this the infant will soon get accustomed to this state of things, and will suffer no interruption from the occupations of those around him in his desire to sleep.

A child should never sleep longer than two hours at a time, in one position; for by this the circulation on one side is much impeded from the compression, and its limbs are also unequally exercised if one favourite side is preferred for sleeping; but, instead of this, the infant should be wakened and turned, and he will soon learn to change his position himself; and it will naturally stretch its limbs in doing this, and feel a pleasure in spreading itself out. The back should never be chosen as a position for a child to sleep on.

In promoting the sleep of a child, the cradle offers a useful assistant; and, however it may be decried, it possesses nu-

merous advantages. It can be moved to any situation for the advantage of warmth or coolness; it invites, by its motion, to repose; and it resembles, in that respect, the situation of the child before birth, when it is suspended in a fluid and floats; so that the cradle feels only to the child as a continuation of that exercise it has been accustomed to. But the motion of the cradle should only be employed to lull it to sleep: and when that has once taken place, its motion should be suspended. All the objections against the cradle are more specious than solid; though, at the same time, its use should not be extended beyond the second year, at most. As the progress of infancy advances, certain regulations should be made with respect to the sleep of the child. The sleep of childhood should never be less than nine hours during the night, and the child should go to bed early; and, observing the proverb, rise early also. A child should never go to sleep immediately after a full meal; neither should he be suddenly waked at any time out of his sleep, from the alarm its nervous system, weak and irritable, must necessarily experience. Children should always be accustomed to sleep in the dark, and brought up to despise the idea of fear. When grown to some age, a child should never be allowed to lie long after day-light, as it only tends to enervate him and give him bad habits.

The great advantages of sleep to children are the restoration of lost energy, or that vigour expended in the course of the day; but, besides this, it tends also strongly to excite growth: for, during the night, the vertebræ, approximating each other by the superincumbent weight during the day, expand again at night, by the recumbent posture.

VIII.—CLEANLINESS AND BATHING.

The proper condition of the skin, open and perspirable, is at all times conducive to health, and particularly so in the case

of children, whose skins are so extremely delicate, and ready to be acted upon by the slightest causes; cleanliness, therefore, or bathing and washing, is at all times essentially necessary to remove any impurities that may collect, either from their own bodies or surrounding agents. In doing this, the great point is to avoid the child's taking cold; and, therefore, the temperature of the water should be such, as neither to endanger this nor produce inflammation. The tepid bath is the temperature best adapted to remove impurities, avoid the risk of taking cold, or any undue reaction. To the use of the cold bath, as a medium of cleanliness, many and forcible objections arise; as a dormant predisposition to constitutional disease may be thus excited; the habit may be too feeble for a proper reaction; there may be a tendency to local determination to the lungs or other organs, and the cold may also act injuriously on the nervous system of the child; for we know it is always disagreeable to its feelings. It may also produce affections of the bowels. For these numerous and strong reasons, the tepid bath, daily used, is the best medium for cleanliness, and its temperature may be fixed at 82° to 98°, the human heat. This operation of the tepid bath should be applied every day, and to every part of the child's skin; and by it a habit of cleanliness will be established, and continue to be a feeling inherent in the individual through life; an attention to this both gives real comfort, and is a strong preventive to disease.

A child may be trained to cleanliness from the earliest period; and he should be taught by signs to give notice of his necessities. Thus his napkin will be rarely soiled, nor continue long, with a careful attendant, cold or wet about him till changed. The early habit of placing him on his chair should be adopted; and custom will teach him soon to declare his wants and second your wishes; the example of the other children also, if there are more than one, will assist your in-

fluence. Thus, the unpleasant habit of wetting the bed will be prevented: a custom, with many children, not easily overcome.

The use of the tepid bath, now recommended, should be employed for the two first years of the child's life; at the end of which time the temperature, if thought proper, may be a little lowered; but even this should be done gradually, and with caution. In conducting the operation of bathing, the child should be exposed no longer than necessary; he should then be well dried, and his clothes replaced. The weather should always regulate the exact degree of temperature of the bath; and, for purposes of cleanliness, the use of soap should be also employed. In doing it, the head should always be first attended to, and the operation finished there, before the rest of the body be wetted. A current of air should be avoided while the child is in the bath; and it should never be employed immediately after the child awakes from sleep.

IX.—EXERCISE OF INFANCY.

If air is so necessary as we have stated for the health of the infant, exercise will be found no less so. The exercise of the child should commence from the earliest period,—even during the first days of its existence. It should not be entirely confined to the bed or cradle, but carried on a pillow, occasionally, through the room, that it may inhale a fresh atmosphere, and even stretch out its limbs. It is only exercise that can give muscular strength, and thus preserve in health the whole machine.

The child, therefore, should never be confined entirely to the bed, but placed so upon a plane and soft surface, that he may be free from restraint, and enjoy his own feelings. The best position is to lay him on his back, where he will soon come to move and force his limbs; and in this way he will

rapidly acquire strength: but, in doing this, he should never be raised upright, or his spine made to support his head and body. This must be a work of time and his own gradual acquirement, by exercising his muscles; when he will gradually be so pleased with his own exertions, as to attempt to sit up of himself, and at last succeed in the attempt: but no effort should ever be made on the part of the nurse to make him sit upright, till his strength is sufficient to bear the position. She should carry him in her arms, the hands sustaining the back and head, and repeating this exercise occasionally. Before the third month, no child should ever be allowed to sit upright, and then it may be carried about by the nurse, properly supported by the hand, and moving it from one arm to another, so that one position may not always be chosen. In this way the child is to be trained, till it acquires strength to know its own powers and to move of itself; and then, by degrees, an attempt will be made by it to walk. The first step at this is to endeavour to crawl, which should be always encouraged, without regard to its spoiling its clothes, or doing injury to such brittle articles as he may lay hold of in his way. The act of crawling exercises every muscle of the body, and, being a voluntary act, the child is highly pleased with his progress; and exertion contributes to give it both vigour and amusement.

Those children that crawl are more robust than others, and in the end walk sooner. As soon as a child is able to crawl, he wishes to do more: he will endeavour to lay hold of something to raise himself; and, though he may often fail, yet in time he will succeed. When once he raises himself, he next attempts to stand with the hold he has taken, and afterwards with that hold extends his other hand to something near him, and thus commences to use his limbs; but, in doing this, he observes great caution; and it is not till after many attempts and failures that he finds he is able to balance himself; and having obtained this step, he soon after runs alone. This is

the natural and gradual progress the child makes when left to himself; and no more should be practised to make him walk at once, nor at too early a period; for deformity of the limbs is a certain consequence of a different treatment. All plans of teaching children to walk in any other way are to be condemned. Nature intends that a child should not walk till a certain period, when his strength is sufficient for it; and of that he is the best judge. No effort should be early pressed upon him; but he should be left to himself to take the previous gradual step we have detailed.

Teaching to walk by one hand is apt to produce injury and dislocation; and even by two hands is not free from objections. The best way is to hold the child by the waist, and guard him from falling.

When a child is once able to walk, no exercise is so proper for him as that; and, when circumstances permit, he should be indulged in it freely, in the open air. And, when not in the open air, the same indulgence should take place in the house, or under cover.

PART II.

ON THE TREATMENT OF THE STOMACH AND BOWELS, DURING INFANCY.

FIRST PERIOD.

DURING the time of gestation, there gradually accumulates in the bowels a dark green substance, nearly black, termed meconium, from its resemblance to cerate of poppies.

This matter is chiefly bilious, is found in different quantities, and in various colours and degrees of tenacity, and, if retained, is certain to derange the bowels of the infant, and induce serious mischief. It is, therefore, for the safety of the child, to be got rid of as early as possible; but Nature, not trusting to the interposition of art, has provided for its removal by her own powers. She has endued the first milk of the mother with the peculiar quality of purging off this source of disease; and, for this very strong reason, that this first milk may not, by a successive flow, be either deprived of or weakened in its original quality, the infant should, as early as possible, be applied to the mother's breast; for where this quality is lost by the delay, recourse must be had to common purgatives: the consequence of which is, to produce colic and spasm of its delicate bowels. The removal of this original matter, lodged in the intestines, is a point of great importance to its future health; and it is often so tenacious, that it requires repeated efforts to do so. So anxious are the female attendants of the infant to get quit of it, that they are not scrupulous about the means; and employ forcible purgatives, which produce serious, and often fatal, bowel complaints.

Though, therefore, the dislodgement of the matter be es-

sential, it must be effected by gentle and more simple means: for a little molasses or manna, or a teaspoonful of sweet oil would be sufficient; if not, a small quantity of castor oil will have the effect; and this may be known by the evacuation assuming the natural appearance. The importance of caution at this period cannot be too much insisted on, when we reflect by what a frail thread the commencement of life is tied, and how the least cause may terminate that existence which has but newly begun; as we see by the uncommon mortality in childhood. For we cannot consider it to be the intention of Providence, but arising from our own mismanagement on the different subjects necessary to the foundation and establishment of health. And this is the more clear, as we too often find that children are born in a state of health, and that they shew no marks of disease till they come into their attendants' hands.

Jaundice of Infants.

Jaundice is a disease that often attacks infants at birth, and which they also bring into the world with them; but it is not from a mere yellowness of the skin that we are to infer that the infant has this disease. The yellowness of skin at birth generally goes off in a few days, and does not seem connected with the biliary secretion, but appears as an accidental occurrence.

The real jaundice is marked by the yellowness of the eyes, and colour of the urine and faeces: the former being of a deep yellow, and the latter of a pale or clay appearance. For if the stools be dark green, or yellow, there is no jaundice. This disease, in a new born child, is often fatal; it is only to be removed by clearing the bowels freely; which the remedy recommended in the conclusion of this work, when given in sufficient doses, will do. And it may be assisted by gentle friction with the hand, moistened with brandy, on the region of the liver, in order to stimulate that organ, and excite its energies. The warm bath has also been occasionally useful. The fatal symptoms in this disease are marked by vomiting, and the livid appearance of the hand and nails.

Red Gum.

One of the complaints of the infant in the first month, connected with the state of the bowels, is—the red gum. Very few infants escape it; and it is proverbially reckoned, by the

nurses, so absolutely necessary to the future health of the infant, that they take particular care in promoting its appearance by warmth, and by giving particular drinks or possets of saffron, marjoram, and other articles. This disease seems to proceed either from the remains of the meconium, or the acetous fermentation from the food, joined with a feebleness of constitution. It is commonly ushered in by nausea and vomiting, or looseness; and particularly where the infant had been kept too warm and closely covered up. The irruption, though at times generally diffused, is most frequently partial; appearing in spots of a livid red colour on the cheek, fore arms, and backs of the hands.

A troublesome complaint, that often appears soon after birth, is colic. This generally attacks infants of feeble constitutions, who, in spite of plenty of nourishment, and a free supply of milk, do not thrive: though, in many cases of it, this circumstance of the supply of nourishment may be the reverse. In either situation, ill-digested food and bad milk may be considered its causes. The complaint is marked by pain every time the child swallows its food, and the same after it has sucked.

From this it is clear that the food immediately passes into a state of decomposition, and the acetous fermentation prevails, rendering it unfit to be prepared into chyle and nourishment. This complaint will be fully corrected by the remedy proposed in the former disease; which, both by increasing the powers of the stomach and preventing the decomposition of the food, removes the source of the malady. It generally commences the attack within a month of the infant's birth; but is uncertain in the period of its continuance. It is particularly aggravated by cold and moisture; and, therefore, the child should never be allowed to remain long wet, but have its cloths frequently changed. But this same complaint of the bowels often assumes, in other cases, a periodical form, and attacks the infant every day at a particular hour, without seeming materially to affect its health, though it cries sufficiently with pain. This form of the complaint often terminates of itself, and being attended with a degree of slowness of the bowels, the remedy we have recommended will have the double effect of quieting the pain and relieving the bowels. It should be administered the moment the paroxysm or fit is about to commence; and, though this form of the complaint is troublesome, it is never dangerous. The infant generally outgrows it; and it seems to arise from some peculiarity connected with

the state of the bowels: the sufferer having, as we remarked, a tendency to costiveness.

Aphthæ, or Sore Mouth.

This disease consists in the formation of pustules in the inside of the mouth, often extending down the throat to the stomach and the whole extent of the alimentary canal. But this last is rare: and generally confines itself to the mouth, which appears covered with a coagulum or crust of milk. When it is extensive the child slavers much, and finds sucking difficult, at the same time crying, as if in much pain. It is also restless and thirsty, apparently wishing to remain at the breast. When it is of a more dangerous nature, the eruption is of a dark brownish colour, or extremely red; but the disease is the same, varying in degree. This affection is always symptomatic, and is invariably preceded by derangement of the primæ viæ, including both stomach and bowels, and by a desire to sleep, though frequently interrupted by internal pain. The bowels shew acrid and green stools, attended with flatulence and noise, and producing excoriation of the skin.

The stomach throws up the milk in a shape of curd. Where there is no vomiting, a sour-smelling gas is exhaled. The disease soon reduces the infant to great debility and emaciation, in consequence of pain from a severe diarrhoea. The stomach rejects all food, and the infant is cut off by inanition. Feeble and prematurely born infants are most subject to this disease, and those badly nursed, and who feed much on farinaceous foods and sweets. The disease arises from a peculiar condition of the stomach, affected by the child's food—For its cure many remedies have been proposed, to correct the superabundant acid of the stomach, which is supposed to be the cause of it. The mother, if suckling, should be confined to animal diet, and should avoid fermented liquors.

Local applications, as the powder of borax and sugar, give relief to the mouth; not rubbed on by the nurse, but allowed to dissolve in the saliva. Cleanliness should be strictly observed to avoid excoriation; and where the infant is excoriated, the parts should be moistened with a linseed wash, and afterwards anointed with lard.

SECOND PERIOD.

The second and most important period in the life of the child is from birth to teething; and it is at this period the

primæ viæ are most apt to be deranged. In all the perfect animals, nature has governed their system, almost exclusively by the powers of the stomach; and this law appears universal. In infancy, the powers of the stomach are extremely limited, from its delicacy and naturally irritable state; and the same law of nature ordains, at certain periods, as we have already stated, that the stomach and its appendage, the mouth, should undergo certain changes, extending their powers in proportion as they are required. But, independent of the irritable state of the stomach, the food itself of the infant proves a source of indisposition. The natural and most common food of the infant is, as we have seen, the milk of the mother; and this, at all times liable to decomposition, is rendered particularly so by changes affecting her; and also by the state both of the stomach, and the general system, at the time of teething. Hence this period has been always regarded as the most fatal era in the life of the child.

The mortality, at this period, is reckoned at one in every ten; and some writers make it so high even as one in every six. For it is this period which calls into action any latent sources of malady that may exist in the constitution of the child, and derived from the parent; while, at the same time, all external causes have more influence on the system of the infant than when in firm health.

The sufferings of the infant, at this critical period, depend upon three circumstances. 1st. The number of teeth coming forward at once. 2nd. The natural feebleness of the child's constitution. And, 3rd. Its susceptibility of irritation.

Whatever consequences arise from dentition in disturbing the system of the infant, one is always certain to occur—a derangement of the stomach and bowels. This may be considered, at first, an effort of nature to prevent or remove fever; and this effort of nature should be seconded by much attention to the diet of the child at this period. The child should be put not only on a very mild, but a very moderate diet; and on no account to be allowed to have either food or drink, which may have a tendency to stimulate the system. A moderate use of mild laxatives, such as molasses, manna, &c. may be permitted, to preserve a favourable state of the bowels, should a tendency to costiveness prevail, which is rarely the case: but as the source of the evil depends on a mechanical cause, the mouth should be often inspected, to shew the state of the teeth; and the operation of dividing the gum should be per-

formed wherever it can conveniently be done, which will at once take off irritation; for, there is danger, if fever continue very severe, and the mouth of the infant be dry and hot, that some serious constitutional affection be induced.

A common attendant of teething is eruptions on the skin. Where these symptoms appear, they mark some constitutional fault, brought into action by the excitement of the teeth. In treating these symptoms, animal food is to be withdrawn from the child, and its diet confined chiefly to arrow-root and rennet whey, preserving its bowels in a regular condition, which will be found highly necessary at this period.

THIRD PERIOD.

The third period, critical to the infant, is the period of weaning. The consequence of weaning is the attack of what is called the weaning brash; which, in a greater or less degree, always attends the abstraction of the mother's milk; and, in order to prevent it, an early use of the cordial should take place, to prepare the infant for the change; and to form the stomach and bowels for assimilating the different food which must now be introduced; or, if already introduced, must be given in greater quantities than before.

The best articles of diet against this complaint, on the child being weaned, are rice water, barley water, gum arabic water, sago, tapioca, and rennet whey; and, where milk is used, it must be mixed with lime water. This complaint often appears suddenly after weaning. The duodenum is chiefly in fault. The product of digestion, in such cases, is ill-digested, and not sufficiently elaborated, as well as too speedily passed through the bowels: thus the indigested mass produces a chyme possessing unusual properties, which makes it act too forcibly on the susceptible bowels of the infant. This complaint rapidly reduces the child, and emaciates it very quickly; and, if not soon relieved, it falls a victim to it. The condition of the stomach is here the first thing to be attended to; and, on that account, all food should be withdrawn from it, in order that the organ may have little to do. Thus, its sustenance should be solely confined to small portions of rennet whey or gum arabic water, and nothing else. By this plan the stomach will regain its powers.

In all cases of weaning brash, where neglected, the stomach becomes so irritable, that a retching, with or without vomiting,

takes place; and, where the latter occurs, the matter brought up is frequently coloured with bile. The consequence of this complaint is, that by the increased and painful actions of the alimentary canal, a loathing is produced of every kind of food; and, along with emaciation, there prevails much thirst and fever. Where it has continued some time, a hectic flush appears on the cheek. From pain, the infant is on a constant whine, shewing a settled discontent in its features, particularly where the emaciation has advanced far. The disease generally proves fatal before the sixth or seventh week; and, where earlier, it takes place from the excessive purgings or convulsions. Weaning brash is most frequent where the infant has been weaned before the eighth or ninth month; particularly with those infants who have been weaned abruptly. At the time the weaning brash comes on, the teeth are generally appearing, and, from the idea of a diarrhoea, or looseness, being wholesome, it is often allowed imprudently to proceed. The stomach and small intestines being, in this disease, the parts first affected, it is at this period, if properly treated, under control; but, if allowed to go on, the liver and biliary system become involved, and it then assumes a permanent, and, too often, an unconquerable form. It may be observed, also, in this malady, from the decomposition of the food, and particularly the milk, a prevailing acid arises; and this is shewn by the green watery evacuations; by their sour smell; by the appearance of hard curd in the faeces; and, if vomiting takes place, by the same smell and appearance of curd, and by a dense white coat on the tongue, which is a stratum of milk coagulum. Where the child is in alarming danger from this disease, restoring it again to the breast is often the best remedy.

CONCLUSION.

As the seat of children's diseases, at the periods of life which have come under our review, is entirely confined to the stomach and bowels; and as their source arises either from the decomposition of the food, or the irritability of their nervous system, acted upon either by mechanical, as in teething, or by chymical causes; the great object is to render this part of their frame less susceptible of irritation, by counteracting the immediate circumstances which give rise to and aggravate this morbid state. These circumstances being limited, in a great measure, to the food and drink of infancy, it lies entirely

within the power of medicine to form a means of prevention and relief: and if seconded by an observance of the regulations laid down for the management of infancy in the preceding part of this work, cannot fail to prevent, in a great measure, the so frequent attacks of infantile diseases, by removing the leading cause as respects their food and drink. Thus, it would tend to lessen the excess of mortality of the human species, which takes place at this early age. Such a mortality, it is proved, only arises from the deviation of man, more than any other animal, from the paths of nature; and, therefore, as we cannot return to aboriginal society, let us at least imitate, so far as we can with advantage, the plans which seem most conducive to give health, vigour, and comeliness to our offspring.

FINIS.

